

ELECTRONIC SYSTEMS LABORATORY
DEPARTMENT OF ELECTRICAL ENGINEERING

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
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May 27, 1966

Dr. John T. Holloway
Office of Grants and Research Contracts
National Aeronautics and Space Administration
300 Seventh Street, S.W.
Washington, D.C.

Dear Dr. Holloway:

In accordance with contractual requirements, this letter status report is being submitted for the period November 1, 1965 through April 30, 1966.

During the reporting period we have continued work on the engineering model of the radar instrument for which we are attempting to establish technical feasibility. The logic circuits which transform our measured quantities in analog form to digital form were completed, tested and evaluated. They perform satisfactorily. A redesign of the receiver i-f strip was undertaken and is nearing completion.

Calibration tests of the instrument have been made in order to establish repeatability and accuracy of the measuring circuits. It was discovered when calibration tests were undertaken that a special piece of test equipment was needed in order to make easy, accurate readings of the output signals. Accordingly, we have designed this equipment, and it is now in operation. The accuracy and repeatability of the instrument is very gratifying, although we do see a few bugs which we are trying to eliminate.

During the reporting period we undertook the design of the last remaining element for the system, namely, a compact antenna suitable for operation in the space environment. This project is being undertaken by a graduate student as a Master's thesis. The work will be completed the latter part of May 1966.

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Dr. John T. Holloway

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We have two reports in preparation. One is on the subject of d-c to d-c converters, the other describes a special-purpose X-band radar target simulator.

With respect to the financial side, our expenditures from November 1, 1965 through April 30, 1966 were \$58,687.21.

Sincerely yours,



J. F. Reintjes

JFR:mb